

AMENDMENTS TO THE CLAIMS

All claim cancellations and amendments are done without prejudice.

Claims 1-214 (cancelled)

215. (Currently Amended) A method for producing oil with an altered fatty acid profile comprising extracting said oil with an altered fatty acid profile from a microbial cell culture produced by culturing a microbial cell comprising a recombinant nucleic acid that is a DNA molecule comprising the coding region of the sequence depicted in SEQ ID NO: 1, said nucleic acid operably linked to ~~transcription and translation control signals~~ a promoter functional in said cell, wherein a polypeptide encoded by said nucleic acid is expressed in sufficient amount in said culture to alter the fatty acid profile.

216. (Previously presented) The method of claim 215, further comprising purifying a component of said oil.

217. (Previously presented) The method of claim 216, wherein said component is a phospholipid.

218. (Previously presented) The method of claim 216, wherein said component is a sulfolipid.

219. (Previously presented) The method of claim 216, wherein said component is a glycolipid.

220. (Previously presented) The method of claim 216, wherein said component is an acylglycerol.

221. (Previously presented) The method of claim 216, wherein said component is a monoacylglycerol.

222. (Previously presented) The method of claim 216, wherein said component is a diacylglycerol.

223. (Previously presented) The method of claim 216, wherein said component is a triacylglycerol.

224. (Previously presented) The method of claim 216, wherein said component is a fatty acid.

225. (Currently Amended) A method for producing oil with an altered fatty acid profile comprising extracting said oil with an altered fatty acid profile from a microbial cell culture produced by culturing a microbial cell comprising a recombinant nucleic acid that is a DNA molecule with at least ~~80%~~ 60% homology to the coding region of the sequence depicted in SEQ ID NO: 1, said nucleic acid operably linked to ~~transcription and translation control signals~~ a promoter functional in said cell, wherein a polypeptide encoded by said nucleic acid forms a monounsaturated bond between carbons 6 and 7 of a fatty acid as numbered from a carboxy terminus thereof, wherein said polypeptide is expressed in sufficient amount in said culture to alter the fatty acid profile.

226. (Previously presented) The method of claim 225, further comprising purifying a component of said oil.

227. (Previously presented) The method of claim 226, wherein said component is a phospholipid.

228. (Previously presented) The method of claim 226, wherein said component is a sulfolipid.

229. (Previously presented) The method of claim 226, wherein said component is a glycolipid.

230. (Previously presented) The method of claim 226, wherein said component is an acylglycerol.

231. (Previously presented) The method of claim 226, wherein said component is a monoacylglycerol.

232. (Previously presented) The method of claim 226, wherein said component is a diacylglycerol.

233. (Previously presented) The method of claim 226, wherein said component is a triacylglycerol.

234. (Previously presented) The method of claim 226, wherein said component is a fatty acid.

235. (Currently Amended) A method for producing oil with an altered fatty acid profile comprising extracting said oil with an altered fatty acid profile from a microbial cell culture

produced by culturing a microbial cell comprising a recombinant nucleic acid that is a DNA molecule operably linked to ~~transcription and translation control signals~~ a promoter functional in said cell to produce the microbial cell culture, wherein said nucleic acid is a deletion mutant of the nucleic acid depicted in SEQ ID NO: 1, wherein a polypeptide encoded by said nucleic acid forms a monounsaturated bond between carbons 6 and 7 of a fatty acid as numbered from a carboxy terminus thereof, wherein said polypeptide is expressed in sufficient amount in said culture to alter the fatty acid profile.

236. (Previously presented) The method of claim 235, further comprising purifying a component of said oil.

237. (Previously presented) The method of claim 236, wherein said component is a phospholipid.

238. (Previously presented) The method of claim 236, wherein said component is a sulfolipid.

239. (Previously presented) The method of claim 236, wherein said component is a glycolipid.

240. (Previously presented) The method of claim 236, wherein said component is an acylglycerol.

241. (Previously presented) The method of claim 236, wherein said component is a monoacylglycerol.

242. (Previously presented) The method of claim 236, wherein said component is a diacylglycerol.

243. (Previously presented) The method of claim 236, wherein said component is a triacylglycerol.

244. (Previously presented) The method of claim 236, wherein said component is a fatty acid.

Claims 245-254 (Cancelled)

255. (Previously presented) A method for producing oil with an altered fatty acid profile comprising extracting said oil with an altered fatty acid profile from a microbial cell culture

produced by culturing a recombinant microbial cell comprising a polypeptide comprising the amino acid sequence depicted in SEQ ID NO:2, wherein said polypeptide is expressed in sufficient amount in said culture to alter the fatty acid profile.

256. (Previously presented) The method of claim 255, further comprising purifying a component of said oil.

257. (Previously presented) The method of claim 256, wherein said component is a phospholipid.

258. (Previously presented) The method of claim 256, wherein said component is a sulfolipid.

259. (Previously presented) The method of claim 256, wherein said component is a glycolipid.

260. (Previously presented) The method of claim 256, wherein said component is an acylglycerol.

261. (Previously presented) The method of claim 256, wherein said component is a monoacylglycerol.

262. (Previously presented) The method of claim 256, wherein said component is a diacylglycerol.

263. (Previously presented) The method of claim 256, wherein said component is a triacylglycerol.

264. (Previously presented) The method of claim 256, wherein said component is a fatty acid.

265. (Currently Amended) A method for producing oil with an altered fatty acid profile comprising extracting said oil with an altered fatty acid profile from a microbial cell culture produced by culturing a recombinant microbial cell comprising a polypeptide with at least ~~80%~~ 60% homology to the sequence depicted in SEQ ID NO: 2 to produce the microbial cell culture, wherein said polypeptide forms a monounsaturated bond between carbons 6 and 7 of a fatty acid as numbered from a carboxy terminus thereof, wherein said polypeptide is expressed in sufficient amount in said culture to alter the fatty acid profile.

266. (Previously presented) The method of claim 265, further comprising purifying a component of said oil.
267. (Previously presented) The method of claim 266, wherein said component is a phospholipid.
268. (Previously presented) The method of claim 266, wherein said component is a sulfolipid.
269. (Previously presented) The method of claim 266, wherein said component is a glycolipid.
270. (Previously presented) The method of claim 266, wherein said component is an acylglycerol.
271. (Previously presented) The method of claim 266, wherein said component is a monoacylglycerol.
272. (Previously presented) The method of claim 266, wherein said component is a diacylglycerol.
273. (Previously presented) The method of claim 266, wherein said component is a triacylglycerol.
274. (Previously presented) The method of claim 266, wherein said component is a fatty acid.

Claims 275-297 (Cancelled)

298. (Currently Amended) A method for producing oil with an altered fatty acid profile comprising extracting said oil with an altered fatty acid profile from a microbial cell culture produced by culturing a microbial cell comprising a recombinant nucleic acid to produce the microbial cell culture, wherein said nucleic acid is a DNA molecule that hybridizes preferentially to a complement of the sequence depicted in SEQ ID NO: 1 under hybridization conditions suitable for selectively screening a recombinant DNA library using a probe comprising said complement, said recombinant DNA library comprising sequences obtained from a *Mortierella* species, said nucleic acid operably linked to ~~transcription and translation control signals~~ a promoter functional in said cell, wherein a polypeptide encoded by said nucleic acid forms a monounsaturated bond between carbons 6 and 7 of a fatty acid as

numbered from a carboxy terminus thereof, wherein said polypeptide is expressed in sufficient amount in said culture to alter the fatty acid profile.

299. (New) The method of claim 298, wherein the *Mortierella* species is *Mortierella alpina*.

300. (New) A method for producing oil with an altered fatty acid profile comprising extracting said oil with an altered fatty acid profile from a microbial cell culture produced by culturing a microbial cell, said microbial cell comprising a *Mortierella alpina*-derived means for forming a monounsaturated bond between carbons 6 and 7 of a fatty acid as numbered from a carboxy terminus thereof, wherein said means is used to produce said altered fatty acid profile.

301. (New) The method of claim 299, further comprising purifying a component of said oil.

302. (New) The method of claim 301, wherein said component is a phospholipid.

303. (New) The method of claim 301, wherein said component is a sulfolipid.

304. (New) The method of claim 301, wherein said component is a glycolipid.

305. (New) The method of claim 301, wherein said component is an acylglycerol.

306. (New) The method of claim 301, wherein said component is a monoacylglycerol.

307. (New) The method of claim 301, wherein said component is a diacylglycerol.

308. (New) The method of claim 301, wherein said component is a triacylglycerol.

309. (New) The method of claim 301, wherein said component is a fatty acid.

310. (New) The method of claim 300, further comprising purifying a component of said oil.

311. (New) The method of claim 310, wherein said component is a phospholipid.

312. (New) The method of claim 310, wherein said component is a sulfolipid.

313. (New) The method of claim 310, wherein said component is a glycolipid.

314. (New) The method of claim 310, wherein said component is an acylglycerol.

315. (New) The method of claim 310, wherein said component is a monoacylglycerol.

316. (New) The method of claim 310, wherein said component is a diacylglycerol.

317. (New) The method of claim 310, wherein said component is a triacylglycerol.

- 318. (New) The method of claim 310, wherein said component is a fatty acid.
- 319. (New) The method of claim 225, wherein the recombinant nucleic acid has at least 80% homology to the sequence depicted in SEQ ID NO: 1.
- 320. (New) The method of claim 265, wherein the polypeptide has at least 80% homology to the sequence depicted in SEQ ID NO: 2.
- 321. (New) The method of claim 225, wherein the recombinant nucleic acid has at least 90% homology to the sequence depicted in SEQ ID NO: 1.
- 322. (New) The method of claim 265, wherein the polypeptide has at least 90% homology to the sequence depicted in SEQ ID NO: 2.
- 323. (New) The method of claim 225, wherein the recombinant nucleic acid has at least 95% homology to the sequence depicted in SEQ ID NO: 1.
- 324. (New) The method of claim 265, wherein the polypeptide has at least 95% homology to the sequence depicted in SEQ ID NO: 2.
- 325. (New) The method of claim 215, wherein said cell is a fungal cell.
- 326. (New) The method of claim 225, wherein said cell is a fungal cell.
- 327. (New) The method of claim 235, wherein said cell is a fungal cell.
- 328. (New) The method of claim 255, wherein said cell is a fungal cell.
- 329. (New) The method of claim 265, wherein said cell is a fungal cell.
- 330. (New) The method of claim 299, wherein said cell is a fungal cell.
- 331. (New) The method of claim 300, wherein said cell is a fungal cell.
- 332. (New) The method of claim 319, wherein said cell is a fungal cell.
- 333. (New) The method of claim 320, wherein said cell is a fungal cell.
- 334. (New) The method of claim 321, wherein said cell is a fungal cell.
- 335. (New) The method of claim 322, wherein said cell is a fungal cell.
- 336. (New) The method of claim 323, wherein said cell is a fungal cell.
- 337. (New) The method of claim 324, wherein said cell is a fungal cell.

- 338. (New) The method of claim 325, wherein said fungal cell is a yeast cell.
- 339. (New) The method of claim 326, wherein said fungal cell is a yeast cell.
- 340. (New) The method of claim 327, wherein said fungal cell is a yeast cell.
- 341. (New) The method of claim 328, wherein said fungal cell is a yeast cell.
- 342. (New) The method of claim 329, wherein said fungal cell is a yeast cell.
- 343. (New) The method of claim 330, wherein said fungal cell is a yeast cell.
- 344. (New) The method of claim 331, wherein said fungal cell is a yeast cell.
- 345. (New) The method of claim 332, wherein said fungal cell is a yeast cell.
- 346. (New) The method of claim 333, wherein said fungal cell is a yeast cell.
- 347. (New) The method of claim 334, wherein said fungal cell is a yeast cell.
- 348. (New) The method of claim 335, wherein said fungal cell is a yeast cell.
- 349. (New) The method of claim 336, wherein said fungal cell is a yeast cell.
- 350. (New) The method of claim 337, wherein said fungal cell is a yeast cell.
- 351. (New) The method of claim 338, further comprising purifying a component of said oil.
- 352. (New) The method of claim 339, further comprising purifying a component of said oil.
- 353. (New) The method of claim 340, further comprising purifying a component of said oil.
- 354. (New) The method of claim 341, further comprising purifying a component of said oil.
- 355. (New) The method of claim 342, further comprising purifying a component of said oil.
- 356. (New) The method of claim 343, further comprising purifying a component of said oil.
- 357. (New) The method of claim 344, further comprising purifying a component of said oil.
- 358. (New) The method of claim 345, further comprising purifying a component of said oil.
- 359. (New) The method of claim 346, further comprising purifying a component of said oil.
- 360. (New) The method of claim 347, further comprising purifying a component of said oil.
- 361. (New) The method of claim 348, further comprising purifying a component of said oil.
- 362. (New) The method of claim 349, further comprising purifying a component of said oil.



363. (New) The method of claim 350, further comprising purifying a component of said oil.
364. (New) The method of claim 351, wherein said component is selected from the group consisting of a phospholipids, a sulfolipid, a glycolipid, an acylglycerol, a monoacylglycerol, a diacylglycerol, a triacylglycerol, and a fatty acid.
365. (New) The method of claim 352, wherein said component is selected from the group consisting of a phospholipids, a sulfolipid, a glycolipid, an acylglycerol, a monoacylglycerol, a diacylglycerol, a triacylglycerol, and a fatty acid.
366. (New) The method of claim 353, wherein said component is selected from the group consisting of a phospholipids, a sulfolipid, a glycolipid, an acylglycerol, a monoacylglycerol, a diacylglycerol, a triacylglycerol, and a fatty acid.
367. (New) The method of claim 354, wherein said component is selected from the group consisting of a phospholipids, a sulfolipid, a glycolipid, an acylglycerol, a monoacylglycerol, a diacylglycerol, a triacylglycerol, and a fatty acid.
368. (New) The method of claim 355, wherein said component is selected from the group consisting of a phospholipids, a sulfolipid, a glycolipid, an acylglycerol, a monoacylglycerol, a diacylglycerol, a triacylglycerol, and a fatty acid.
369. (New) The method of claim 356, wherein said component is selected from the group consisting of a phospholipids, a sulfolipid, a glycolipid, an acylglycerol, a monoacylglycerol, a diacylglycerol, a triacylglycerol, and a fatty acid.
370. (New) The method of claim 357, wherein said component is selected from the group consisting of a phospholipids, a sulfolipid, a glycolipid, an acylglycerol, a monoacylglycerol, a diacylglycerol, a triacylglycerol, and a fatty acid.
371. (New) The method of claim 359, wherein said component is selected from the group consisting of a phospholipids, a sulfolipid, a glycolipid, an acylglycerol, a monoacylglycerol, a diacylglycerol, a triacylglycerol, and a fatty acid.
372. (New) The method of claim 361, wherein said component is selected from the group consisting of a phospholipids, a sulfolipid, a glycolipid, an acylglycerol, a monoacylglycerol, a diacylglycerol, a triacylglycerol, and a fatty acid.
373. (New) The method of claim 363, wherein said component is selected from the group

consisting of a phospholipids, a sulfolipid, a glycolipid, an acylglycerol, a monoacylglycerol, a diacylglycerol, a triacylglycerol, and a fatty acid.